



THE IMPACT OF USING LOAD EXERCISES ACCORDING TO THE INTENSITY AND VOLUME OF SOME TYPES OF STRENGTH ON THE LEVEL OF TECHNICAL PERFORMANCE OF THE GRIPS OF THE ADVANCED ROMAN WRESTLERS

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Abstract

The research aims at preparing exercises by employing the load according to the intensity and volume for some types of strength in the level of technical performance of some of the advanced Roman wrestler's grips. The research also aims at identifying the effect of these exercises according to intensity and volume on some types of strength, because recent trends in sports training emphasized on the training process for athletes. Among these trends are the intensity of training volumes, through which some types of strength can be developed in the technical performance of Roman wrestlers, and through which changes occur through the training course, days, or phase through various methods, including the increase in the number of training units per week or the increase in the number of training units per week. The training volume in the training units and the same intensity used in the week or month. Owing to the vast development that the wrestling has reached, especially for some types of strength in performance, as well as the wrestlers' need for special strength capabilities. This means the integration of physical, technical and schematic performance. This can only be done through the use of exercises for various training loads that can be controlled when understanding the nature of the game and its requirements. This is reflected positively on physical performance, which contributes to skill and planning performance. Therefore, rationing the load has become a necessity to raise the level of sports and achieve the best results. The researcher used programs using exercises and their impact on the extent of solving the research problem, in addition to the design of the two equal groups with pre- and post-tests was chosen. The research sample consisted of wrestling players in Baghdad for a category (60-66) kg with (12) wrestlers. Each group included (6) wrestlers with (3) wrestlers for each weight. Furthermore, the exercises for load, intensity and volume of the capabilities of the types of strength were used, where performing the training curriculum was prepared by the researcher. The pre and post tests were conducted, after which the data were dumped and statistically processed. The data



were presented, analyzed and discussed. The researcher concluded that the training curriculum prepared by the researcher has an effective role in developing the types of strength, intensity and volume for some physical abilities and the level of technical performance of the grips of the advanced wrestlers in Roman wrestling.

Introduction:

Sport plays an effective and influential role in raising the international and continental level for every country around the globe. The specialists' opinions in the field of sports training, and the effective role of wrestling in the Olympic and international games globally, and the vast development it has reached in our country, especially in recent years, has gained fans, and followers. One of the most essential sciences used by experts and specialists to support the achievement and growth of athletes in a variety of sports was the significance of sports training. The development of new training curricula and the tools employed in the training process have led to the training process taking on a really organizational shape and structure. This development has resulted in adding several of these contemporary training curricula in keeping with the nature of the specialized activity, which directly affects how well wrestlers perform in terms of skill and physical preparedness. Therefore, wrestling is one of the sports that has received increasing attention by specialists and experts, seeking to develop this game by raising the wrestlers' levels in all various aspects of preparation. However, the skill and tactical performance are considered the basic factors, but physical preparation, especially some types of force, are regarded as the bridge that connects each other." (Al-Rubaie and Al-Mawla, 1988:11). Therefore, the interest and integration between physical, skill and planning preparation was as a result of sound scientific planning for the training stages, which also leads to achievements. Accordingly, sporting achievements must be achieved and get into advanced positions at entire levels. There must be means to raise the level of their performance to an extent that exceeds their individual capabilities. They have to resort to increasing the training loads and their courses (Al-Qaisy, 2012: 25). The high performance of wrestling needs physical requirements, especially the types of force that have a direct impact on the success of the performance of technical grips during the fight, especially the grips performed through multiple positions and various directions through which the grips take place. The wrestler gets high points in the event of a successful performance and controlling the opponent.

Research Problem:

The research problem is represented in the observation by the researcher that he is one of the specialists and followers in the wrestling game. The researcher observed that the majority of coaches place a strong emphasis on the type of intensity and size in the capabilities of some special strength in the advanced wrestler's demands in Roman wrestling by performing their training unit during the special preparation stage in a way that is equal in size and of mono training rhythm, whether during the daily training unit for loading units in training programs, weekly, or monthly. Therefore, the researcher decided to study this problem by preparing unit exercises for load according to the intensity and volume in an effort to develop the physical aspect of some types of strength and the level of technical performance of the grips of Roman wrestlers according to the intensity and volume of the variables in the abilities of some types of strength in the level of some of the grips of advanced Roman wrestlers.

Research Areas:

- The human field: The advanced Roman wrestlers in Baghdad at ages (21-23) years, for the weight (60-66) kg.
- Time domain: From 27/7/2022 to 27/9/2022.
- Spatial domain: The wrestling training center hall in Baghdad Club in Freestyle and Roman Wrestling, at Baghdad.

Research Methodology:

The researcher adopted the experimental method for it fits the research problem, which represents "the most valid approach to addressing several scientific problems scientifically and theoretically." (Al-Ghareeb, 1979: 217). Thus, the researcher made use of the method "the two equivalent groups" for it is relevant to the nature of the problem and the research procedures. It is an attempt to control all the basic variables and factors with the exception of one variable. The researcher develops or changes it in order to determine and measure its scientific impact. (Al-Shawuuk, 2004:10)

Research community and sample:

A sample from the advanced wrestlers in Baghdad, who were (21-23) years for the weight category (60-66) kg was selected deliberately by the researcher. They were (12) out of a total of (15) wrestlers. Three wrestlers were selected to conduct the exploratory experiment on, who were randomly distributed by lottery into two



experimental and control groups, with (6) wrestlers per group, and (3) for each weight. Thus, the sample was (80%) of the original population, where numbers were taken from (1-6) the experimental group and (7-12) from the control group. Via this type of selection, the researcher gives an equal opportunity for all members of the community to be among the selected sample. (Qanalichy, 1999: 145)

Means of collecting information:

- Arabic and foreign sources.
- Personal interviews.
- Observation, tests and measurements.
- International Information Network (Internet).
- Assistant work team.

Tools and devices used in the research:

Medical scale for measuring weight (kg) made in China.

- A tape to measure the length.
- Two stopwatches.
- A whistle.
- A wrestling mat and wrestling swimsuit (12).
- Wrestling shoes (12) pairs.
- One hand-held scientific CATIGA calculator.
- One DELL laptop calculator.

Procedures for research tests:

The researcher has identified the research variables and their tests that advanced Roman wrestling players need according to their local and international field experience in the wrestling game, which are:

Determination of physical and skill variables and their tests:

- 1- Performing a lateral grip to measure the wrestler's plosive power.
- 2- Performing an threshold grip from under the armpit to measure the quick power in the performance of the grip.
- 3- Performing the throwing grip from above the back to measure the endurance of the force in the performance of the grip.

Research tests:

Tests, in general, are a basic means of assessment in all general fields and in the field of physical education and sports sciences in particular. Accordingly, "the selection of tests must be based on the purposes for which they are performed." (Ibrahim, 2001:286). The tests related to Al-Kubaisi have been modified in terms of the type of grip. The researcher conducted the scientific basis for the tests, and all the tests were valid, reliable and objective. (Al-Kubaisi, 1994: 57)

Testing the performance of the lateral drop grip for one time in the least possible time (Al-Kubaisi) (Al-Harhour, 1993: 157)

The purpose of the test is to measure the plosive force in the performance of the grip.

Tools used: a wrestling mat, wrestling swimsuit, wrestling shoes, whistle, and a stopwatch.

Performance description: Once putting the technical performance face to face and coherence between the test player and the opposing player, and once the start signal is given with the whistle, the tested player starts performing the grip.

Test conditions:

- 1- The opposing player must be of the same weight as the tested athlete.
- 2- Two attempts are given to the tested player and the best of them is calculated.

Method of calculation: the minimum time possible in the performance of the grip for the best attempt is calculated.

Testing the performance of the grip of threshold under the armpit and dropping the opponent to the ground within (10) seconds. (Al-Kubaisi, 1994: 57)

The purpose of the test is to measure the characteristic of speed in the performance of the grip.

Tools used: a wrestling mat, wrestling suit, wrestling shoes, whistle, and a stopwatch.

Performance description: Once the face-to-face technical performance and gripping between the test player and the opposing player begin, and once the start signal is given with the whistle, the tested player begins to fully perform the grip and return to the first position which is the position of standing, and perform the grip again, trying to repeat it as many as possible within (10) seconds.

**Test conditions:**

- 1- The opposing player must be of the same weight as the tested athlete.
- 2- Any pause is within the time of the test.

Scoring method: the number of correct grips within (10) seconds is scored.

2-5-3 To test the performance of the throwing grip from above the back from the technical performance position of the grip within (60) seconds. (Al-Kubaisi, 1994:11)

The purpose of the test is to measure the performance of the force when performing the grip.

Tools used: a wrestling mat, wrestling suit, wrestling shoes, whistle, and a stopwatch.

Performance description: During performing the grip face to face and gripping between the test player and the opposing player, and once the start signal is given with the whistle, the tested player shall perform the grip and return to the position to perform the grip again, trying to repeat it as many as possible within (60) seconds.

Test conditions:

- 1- The opposing player must be of the same weight as the tested athlete.
- 2- Any pause is within the time of the test.

Method of calculation: the number of correct grips within (60) seconds is calculated.

Stability Coefficient of Tests:**Validity of the test:**

Validity is defined as “the ability of the test to measure what it was designed for or the characteristic to be measured.” (Al-Kanani, 2009:20). The researcher used the subjective validity coefficient by the outcome of the root of the reliability coefficient, where the results of all calculated values were higher than the tabular value of (0.57) at the degree of freedom of (10) and the level of significance of (0.05). This indicates the validity of all these tests.

Test stability:

The stability test is defined as “the consistency of results, which is considered stable if the same results are obtained when re-applied to the same individuals in the same conditions.” (Allawi and Ratib, 1999:19). The researcher applied the



selected tests to the exploratory experiment sample, which were (3) wrestlers on 27/7/2022. This test was re-applied after six days, and then the simple correlation coefficient (Pearson) was extracted between the results of the two tests. The results of the calculated values were all higher than the tabular value of (0.57) at the degree of freedom of (10) and below the significance level (0.05). This indicates that all tests have a high degree of stability.

Objectivity of the test:

Objectivity means that there is no difference between assessors in judging a thing or a particular subject.” (Majeed, 1989:56). For the purpose of obtaining the objectivity of the test concerned with the research, the researcher used two judgments to indicate the results of the tests. After processing the results of both judgments statistically by extracting the correlation coefficient, it appeared that all the calculated values are greater than the tabular value of (0.57) at the degree of freedom at (10) and the level of significance at (0.05). This indicates the objectivity of all these tests.

Research Field Procedures:

The research procedures consisted of the pre-tests and the training curriculum used, as well as the post-tests of the research sample.

Pretest:

The pre-tests of the research sample were conducted within two days in the wrestling training center hall, Baghdad Wrestling Club, after determining the conditions related to the tests in terms of time and place, the tools used, the method of performance and the assistant work team. The physical abilities and the level of technical performance were tested on 29/7/2022.

Training Curriculum:

After reviewing several available scientific sources in the field of training science, wrestling and personal interviews with some experts, the training curriculum was prepared by the researcher with the aim of improving some physical variables in the training of some types of strength and the level of technical performance of some of the grips of the advanced Roman wrestlers aged (21-23) years old for the weight category (60-66) kg. Matters related to the training unit were taken into account according to its divisions. The training intensity as well as volume were



determined according to the methods of high-intensity interval training and repetition. For example, during the first week, the intensity rate was (85%), whereas in the second week, the intensity rate was (85%), but the training volume during the week was greater. As for the third week, the intensity of training increased to (90%) in the same manner as the first week. In the fourth week, the intensity was descended in the same manner as the second week. So for the rest of the trial period. The rest periods were given according to the intensity, volume and method of training to obtain the best results. Then the researcher conducted the training curriculum on the experimental group for the period from 30/7/2022 to 30/9/2022.

The training curriculum included the following:

- 1- Performing the training curriculum took (8) weeks, with two units per week (Saturday and Tuesday). Thus, the number of training units reached (24) training units that were performed during the special preparation period.
- 2- The researcher used the principle of gradual loading (1:3), that is, three weeks of ascent and the fourth week of descent. The training started with a weekly training difficulty in order during each training month. In the first month, the weekly intensity was (85%), (90%), (95%), and (85%) a week, in addition to one week for (100%), then the post test. The researcher relied on the main part in calculating the difficulty of the training unit to ensure that it reached the real level of measurement. The main part time was in the first week of each month (60 d). As for the second week, related to increasing the size, its time was (70 minutes) and so on for the intensity of the training unit and the gradation of performance in it.

Post-tests:

After completing the performing the training curriculum for the research sample, the researcher conducted the post-tests of the research sample as well in two days in the hall of the Wrestling Training Center, Baghdad Sports Club. The researcher was keen to provide all the conditions and requirements in which the pre-test of the research sample was carried out. On 27/9/2022, some types of force were tested in the grips performance for plosive force capabilities, speed, strength endurance, and technical performance level.



Statistical means

Arithmetic mean, standard deviation, mean, skew coefficient, T-test for non-independent samples, and T-test for independent samples. (14:39,49,146, 160, 175)

Presentation, analysis and discussion of the results:

Presenting the results of the pre and post tests of the variables for some types of strength and the level of performance of the Roman wrestling grips for the experimental group, their analysis and discussion.

Table (1) shows the values of the means and standard deviations between the results of the pre and post tests for the variables of some types of strength and performance level of grips for the experimental group

Tabular (T) value (3.57) below significance level (0.05) and degree of freedom (5)

Table (1) shows the results of the physical research variables and the level of technical performance of some grips in the pre and posttests of the experimental group members. In a test measuring the plosive force of the lateral drop to the ground). The arithmetic mean in the pre-test was (3,666) and a standard deviation of (0.807). In the post-test, the arithmetic mean was (2,183) with a standard deviation of (0.394), while the calculated (T) value was (7,193), which was greater than the tabular (T) value of (3,57). This indicates a significant difference. As for the test of measuring force characterized by speed for the threshold gripping from the armpit and dropping the opponent to the ground, the arithmetic mean in the pre-test was (7) and a standard deviation of (1,264). In the post-test, the arithmetic mean was (11,666) with a standard deviation of (2,066), while the calculated (T) value was (8,768), which was greater than the tabular (T) value of (3.57). This indicates that there are significant differences. In the strength endurance test (for the throwing grip from above the back), the arithmetic mean in the pre-test was (17) and a standard deviation of (3,656). As for the post-test, the arithmetic mean was (38.5), with a standard deviation of (3,638). The calculated value of (T) was (12,241), which was greater than the tabular value of (T) at (3,57). This indicates there are significant differences.

The researcher attributes the significant differences in physical abilities tests (plosive power, speed, strength endurance of the experimental group between the pre and post tests and in favor of the post test to the physical exercises of the various types of strength and skill used in the training curriculum prepared by the

researcher. In addition, the varying ripples of intensity and size, the methods and training methods used greatly affected the development of the physical aspect of advanced wrestlers. This type of training requires a high effort when performing load exercises, as well as raising the efficiency of abilities in the types of plosive power, speed and endurance for wrestlers. As for the significant differences in the test of measuring the level of technical performance of the experimental group between the pre and post tests, in favor of the post test, the reason is due to the training curriculum and the exercises it contained, which positively contributed to developing the level of performance. In addition, the suitability of the training curriculum with the abilities of the types of strength of the wrestlers positively affected the development of the technical performance of some of the grips of the Roman wrestlers. (Al-Haerhuri, 1993:101)

2- Presenting the results of the pre and post tests of the variables in some types of strength and the level of performance of some grips of Roman wrestling for the control group, analyzing and discussing them.

Table (2) shows the values of the arithmetic means and standard deviations between the results of the pre and post tests for physical variables and the level of performance of some grips for the control group.

Variables	(T) tabular	(T) calculated	Posttest		Pretest		Measuring unit	Significance
			Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean		
The performance test of the side drop grip to measure the plosive force in the performance of the grip.	3,57	7,193	0,294	2,183	0,802	3,666	Seconds	Sig.
Underarm threshold grip performance test to measure the speed of grip performance.	3,57	8,768	2,066	12,666	2,264	7	No. times	Sig.



The performance test of the throwing grip from over the back to measure the endurance of the force in performing the grip.	3,57	12,241	2,638	38,5	3,656	17	No. times	Sig.
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The tabular (T) value (257) is under significance level (0.05) and degree of freedom (5)

Table (2) shows the results of the physical research variables and the level of technical performance of some grips in the pre and post tests for the members of the control group. In the plosive force measurement test (grip the side drop to the ground), the arithmetic mean in the pre-test was (3,733) and a standard deviation was (0.559). In the post test, the arithmetic mean was (2,812) with a standard deviation of (0.464), while the calculated (T) value was (7,924), which is greater than the tabular (T) value of (2,57). This indicates a significant difference. As for the speed-distinguishing force test (threshold grip from the armpit and drop the opponent to the ground), the arithmetic mean in the pre-test was (7,166) and a standard deviation of (2,132). In the post-test, the arithmetic mean was (10) with a standard deviation of (0.916), while the calculated (T) value was (8,285), which is greater than the tabular (T) value of (2.57). This indicates that there are significant differences. In the force endurance test (for the grip of the throw from above the back), the arithmetic mean in the pre-test was (15) and a standard deviation of (2,556). As for the post-test, the arithmetic mean was (19.5) with a standard deviation of (2,388), while the calculated (T) value (9,868), which is greater than the tabular (T) value of (2,57). This indicates that there are significant differences. The researcher attributes the significant differences in the physical abilities tests of the types of force (plosive force, speed, and force endurance) for the control group between the pre and post tests and in favor of the posttest compared with the experimental group to the effect of the training curriculum prepared by the trainer. It contributed to making a change in the physical abilities of some types of strength by effort during exercise. Moreover, the way it is used



has a good effect on developing the wrestlers' physical abilities that qualify them to a level commensurate with the nature of the game performance.

Presentation, analysis and dimensional tests of the variables for some types of strength and the level of technical performance of the wrestlers' grips for the control and experimental groups, their analysis and discussion.

Table (3) shows the values of the arithmetic means, standard deviations, the calculated and tabular (T) value, and the level of significance. Post-tests of variables for some types of strength and the level of technical performance.

The wrestlers' grips for the control and experimental groups

Variables	(T) Tabular	(T) calculated	Groups		Unit of measuring	Significance
			Experimental	Controlling		
The performance test of the side drop grip to measure the explosive force in the performance of the grip.	2,22	3,024	2,183 0,394	Arithmetic mean 2,812 Standard deviation 0,464	Second	Sig.
Underarm threshold grip performance test to measure the speed of grip performance.	2,22	4,443	12,666 2,066	Arithmetic 10 mean Standard deviation 0,916	No. of times	Sig.
The performance test of the throwing grip from over the back to measure the endurance of the force in the performance of the grip.	2,22	5,743	38,5 2,638	Arithmetic 19,5 mean Standard deviation 2,388	No. of times	Sig.

The tabular (T) value (2.22) is under significance level (0.05) and degree of freedom (10)



Table (3) shows the post tests of the physical research variables for some types of strength and the level of technical performance of the wrestlers' grips for the control and experimental groups. In the test of measuring the plosive force of the lateral drop to the ground. The arithmetic mean value of the post-test for the experimental group was (2,183) and standard deviation (0.394), while the arithmetic mean of the post-test for the control group was (2.812), and the standard deviation was (0.464), and by extracting the calculated (T) value of (3,024) which is greater than the value of (T). The tabular value of (2,22) is below the significance level (0.05) and at the degree of freedom (10). This indicates that there are significant differences between the experimental and control groups and in favor of the experimental group.

As for the speed-characterized force measurement test (threshold grip from the armpit and drop the opponent to the ground), the arithmetic mean value of the post-test for the experimental group was (12,666) and a standard deviation of (2,066). The arithmetic mean of the post-test for the control group was (10) with a standard deviation of (0.916) and by extracting the calculated (T) value (4,443) which is greater than the tabular (T) value amounted to (2.22) which is under the significance level (0.05) and at the degree of freedom (10). This indicates that there are significant differences between the experimental and control groups and in favor of the experimental group.

In the force endurance test (for the throwing grip from above the back), the arithmetic mean value of the post-test for the experimental group was (38.5), with a standard deviation of (2,638), while the arithmetic mean of the post-test for the control group was (19.5), with a standard deviation of (2,388) and by extracting the calculated (T) value of (5,743) which is greater than the tabular value (2,22) under the significance level (0.05) and at the degree of freedom (10). This indicates that there significant differences between The experimental and control groups and in favor of the experimental group. The researcher attributes the significant differences between the two post-tests of the experimental and control groups, and in favor of the experimental group, to the physical abilities of some types of force (plosive force, speed-characterized force, and endurance of force) to the training curriculum prepared by the researcher who contributed to the development of physical research variables.

The physical abilities of the types of strength are very important in the game of wrestling because they help in gaining technical points through the technical performance of technical grips, especially the grips through which the wrestler



gains the highest technical points and achieve the best results. Therefore, in order for playing to gain sufficient strength to improve the work of muscles related to technical performance on it, using methods and training methods in a scientific and thoughtful manner to develop special physical abilities, due to the close connection between physical abilities and technical performance because a wrestler cannot master the technical grips without having high physical abilities. Furthermore, the researcher prepared the training curriculum according to the exact scientific bases of the size, intensity and comfort appropriate to the capabilities of some types of strength for wrestlers. This led to the development of the physical aspect and the level of technical performance of the experimental group. Structured and programmed training, the use of standardized types of intensity in training, and the use of optimal rest between repetitions leads to the development of achievement.

Conclusions:

The researcher concluded that the training curriculum prepared by him has an effective role in developing capabilities in some types of strength and the level of performance of technical grips. The training curriculum prepared by the researcher according to the ripple of varying size and intensity in the training loads necessary for its application had a positive impact on developing the capabilities of some types of strength and holdings of technical performance among the members of the group.

Recommendations:

The training curriculum prepared by the researcher in the wrestlers' training should be necessarily used. Training loads must meet the needs and abilities of the wrestlers.

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